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**Page White
and Farrer**

Patent and
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BY FAX AND POST

Dear Sirs

**International Patent Application No. PCT/IB02/02324
Nokia Corporation**

In response to the Written Opinion dated 22 January 2004 relating to the above-mentioned PCT Application, please find enclosed amended pages 21 to 24 to replace pages 21 to 24 currently on file.

Claims 1, 20 and 21 have been amended to recite that the SCTP signalling (Claims 1 and 20) or SCTP transport packets (Claim 21) include a source port number and a destination port number in addition to the connection identity information.

The Examiner considers Claims 1, 4, 6-9, 12-14 20 and 21 of the present application to lack novelty, and all of the Claims 1-21 to lack inventive step in light of the cited documents D1 ("Stream Control Transmission Protocol" by R Stewart et al) and D2 ("TLS over SCTP" by Jungmaier A.). We believe that the claims are both novel and inventive, particularly in light of the amendments explained above.

One of the aims of the present invention, as described in the specification, is to negate the requirement of an extra layer between the stream control transmission protocol (SCTP) layer and the radio access network application part (RANAP) layer in an internet protocol based system. The RANAP layer does not contain sufficient addressing information in the application level messages, and therefore accurate addressing has to be done below this layer. Rather than introducing an extra layer which greatly complicates the system, a better solution is presented by the present application. According to the present invention as recited in independent claims 1, 20 and 21, SCTP signalling/SCTP transport packets between at least two entities in an internet protocol based system comprise connection identity information relating to a connection between the at least two entities. It has now been made clear in the claims that the connection identity information is in addition to the source and destination port numbers defined by the SCTP protocol.

'Connection identity information', as defined in the specification on page 10 of the present application, is the "additional information used to identify an entity, application, signalling flow, connection or the like". Furthermore, as described

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on page 10, the identification is preferably additional addressing identifying the ultimate destination of the data, message, information or the like. This will usually identify a user connected to a base station or access node via a wireless interface. We respectfully submit that SCTP signalling comprising connection identity information as defined above, which is in addition to the source and destination port numbers defined by the SCTP protocol, is not disclosed by either of the cited documents D1 nor D2, as will now be explained.

Cited document D1 ("Stream Control Transmission Protocol" by R Stewart et al) is acknowledged in the present application on page 2 under the reference RFC2960. This document describes the stream control transmission protocol as standardised by IETF (internet engineering taskforce). The SCTP protocol runs directly on top of an IP layer and is designed to transport PSTN signalling messages but is capable of being used in IP RAN networks as a common protocol, although this would require an additional adaptation layer as described above.

On page 16 of D1 the SCTP header is described, which includes a source port number and a destination port number. These port numbers are also illustrated in the present application in figure 4b, and described on page 13 of the present application, and have been recited in new Claims 1, 20 and 21 of the present application. As described in the application, the source port number is the sender's port number, and this can be used by the receiver in combination with a source IP address, the SCTP destination port and possibly the destination IP address to identify the association to which the packet belongs. The association is the protocol relationship between SCTP endpoints. The destination port number is the SCTP port number to which the packet is destined. It is now clear in the claims that neither of these numbers are connection identity information as defined by the present invention, which is provided in addition to port numbers. In any case the port numbers merely relate to signalling at the SCTP level, which is only relevant between two SCTP endpoints.


The Examiner has suggested that D1 also discloses that the payload protocol identifier represents an application, however we respectfully submit that this is not the case. The payload protocol identifier has been described on page 23 of D1. The payload protocol identifier is a value representing an application specified protocol identifier. In other words, the value represents a protocol identifier which is specified by an application (or upper level). D1 does not disclose that this value represents an application.

Cited document D2 ("TLS over SCTP" by A Jungmaier) describes the usage of the transport layer security (TLS) protocol, as defined in RFC2246, over the stream control transmission protocol (SCTP) as defined in RFC2960. The transport layer security protocol describes using handshaking to provide secure communication links. This document does not disclose modifying SCTP signalling so as to include connection identity information as recited in the claims of the present application, in addition to the source and destination port numbers defined by the SCTP protocol. Merely mentioning the use of handshaking does not imply that the SCTP signalling or packets comprise connection identity information. In fact, handshaking signals are likely to be signals for requesting data and acknowledging receipt of data, and not additional addressing, provided by the connection identity information.

Thus neither D1 nor D2 disclose SCTP signalling comprising source and destination port numbers, and connection identity information as defined by the present application, and recited in Claims 1, 20 and 21.

Accordingly, it is respectfully submitted that the claims on file are novel and inventive over the cited prior art documents. We look forward to receiving a favourable IPER.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'V. Driver', with a stylized flourish at the end.

DRIVER, Virginia Rozanne
Authorised Representative

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CLAIMS

1. An internet protocol based system comprising a plurality of entities, at least two of said entities being arranged to use SCTP for signalling therebetween, said SCTP signalling comprising a source port number, a destination port number, and connection identity information relating to a connection between at least two of said entities.
2. A system as claimed in claim 1, wherein said connection identity information comprises address information.
3. A system as claimed in claim 2, wherein said address information identifies at least one other further entity.
4. A system as claimed in claim 1 or 2, wherein said connection identity information comprises information identifying an application.
5. A system as claimed in claim 1, wherein said connection identity information identifies a connection flow.
6. A system as claimed in any preceding claim, wherein said connection identity information is provided in an SCTP packet.
7. A system as claimed in claim 6, wherein said connection identity information is provided in the data chunk part of the SCTP packet.
8. A system as claimed in claim 7, wherein said connection identity information is provided in a payload protocol identifier field.

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9. A system as claimed in claim 7, wherein said connection identity information is provided in a field between a stream sequence number field and user data.
10. A system as claimed in claim 6, wherein said connection identity information is provided in a header for the SCTP packet.
11. A system as claimed in any of claims 6 to 10, wherein said address information is provided in a separate field in said SCTP packet.
12. A system as claimed in any preceding claim, wherein at least one of the two entities is arranged to provide further address information relating to at least one of said two entities.
13. A system as claimed in any of the preceding claims, wherein at least one of said two entities comprises means for sending and/or receiving SCTP packets to and/or from the other of said two entities.
14. A system as claimed in any preceding claim, wherein at least one of said two entities comprises means for setting up SCTP associations.
15. A system as claimed in any preceding claim, wherein at least one of said two entities comprises means for receiving status information relating to SCTP associations.
16. A system as claimed in any preceding claim, wherein at least one of said two entities comprises means for forwarding SCTP packets to a radio network layer in dependence on said connection identity information of said further entity.

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17. A system as claimed in any preceding claim, wherein at least one of said two entities comprises means for adding said connection identity information of said further entity to a SCTP packet.

18. A system as claimed in any preceding claim, wherein said further entity comprises at least one of the following:

- user terminal,
- user,
- group of users,
- service,
- network, or part of network,
- server, or
- cell or base transceiver station.

19. A system as claimed in any preceding claim wherein one of said entities is one of the following:

base station; controller; radio network controller; core network; radio network access server; gateway or server

and the other of said entities is one of the following:

base station; controller; radio network controller; core network; radio network access server; gateway or server

20. A method for use in an internet protocol based system comprising a plurality of entities, comprising the steps of:

sending SCTP transport signalling information between two of said entities, said SCTP signalling information comprising a source port number, a destination port number, and connection identity information relating to a connection between said two entities.

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21. An entity for use in a internet protocol based system, said entity comprising means for sending to another entity an SCTP transport packet, said entity being arranged to include in said packet a source port number, a destination port number, and connection identity information relating to a connection between at least two of said entities.

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